S/081/62/000/010/075/085
B166/B144

AUTHORS: Grishin, Ye. I., Birinberg, M. E.

TITLE: Protection of the underwater part of ships' hulls and of surfaces exposed to extreme humidity by using oil-free anticorrosives

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 10, 1962, 645, abstract 10P307 (Lakokrasochn. materialy i ikh primeneniye, no. 6, 1960, 49-51)

TEXT: A review of the composition and properties, and of detailed recommendations for the use of paints ЭКЖС-40 (EKZhS-40), ЭКА-50 (EKA-50), ЭКСС-50 (EKSS-50), ЭКС-5 (EKS-5) based on ethinol varnish and petroleum-based ПЖ (PZh) mastics. [Abstracter's note: Complete translation.]

Card 1/1

GRISHIN, V.Ya.; ZVORONO, Ya.P.; KAPLAN, M.Ya.

Electrical equipment for an electromagnetic stirring of molten steel. Elektrosila no.22:18-22 '63. (MIRA 17:1)

[illegible], V. Ya.

[illegible], G. [illegible] and [illegible], V. Ya. "[illegible] operations", Elektrosvyaz, No. [illegible], 19[illegible], p. [illegible].

SO: U-[illegible], 11 March [illegible], (Letopis 'Zhurnal 'nykh Statey, No. [illegible]).

ACC NR: AT7004204

the emission characteristics of the metals investigated. A short discussion of type PIRED-5 pyrometer is presented. Orig. art. has: 2 tables, 1 graph, and 2 equations.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AT7004204 (A) SOURCE CODE: UR/0000/66/000/000/0003/0009

AUTHORS: Svet, D. Ya.; Afon'kin, V. G.; Grishin, V. V.; Maryakhkin, S. P.; Yezhova, T. N.; Parfinovich, A. F.

ORG: none

TITLE: Photoelectronic pyrometry of metals in the near infrared, visible, and ultraviolet spectral regions

SOURCE: AN SSSR. Institut metallurgii. Eksperimental'naya tekhnika i methody vysokotemperaturnykh izmereniy (Experimental techniques and methods of high temperature measurement). Moscow, Izd-vo Nauka, 1966, 3-9

TOPIC TAGS: ir pyrometer, optic pyrometer, radiation pyrometer, photoelectric pyrometer, pyrometry / PIRED-5 pyrometer

ABSTRACT: A discussion of using radiation pyrometry in determining the temperature of molten metals is presented. The discussion, an extension of the work of D. Ya. Svet (Dokl. AN SSSR, 1961, 140, No. 4), is concerned mainly with estimating the difference between the luminous and true temperature of molten metals in the near infrared, visible, and ultraviolet spectral regions. Experimental results for molten iron, nickel, and cobalt respectively are tabulated. It is concluded that, to insure accurate automatic temperature recording of molten metals by radiation pyrometry, is is essential to know

Card 1/2

GRISHIN, V.V.

Urgent [illegible] of [illegible] and technological [illegible].
[illegible] (MLRA 17:6)

1. Predsedatel' Komsomol'skogo [illegible] soveta profsoyuzov.

Grigor'yev, Viktor Vasil'yevich.

[Tasks of trade unions in the further development of agriculture; a paper delivered at the Third Plenum of the All-Union Central Council of Trade Unions, February 25, 1964] Zadachi profsoiuzov po dal'neishemu razvitiiu sel'skogo khoziaistva; doklad na III plenume VTSSPS, 25 fevralia 1964 g. Moskva, Profizdat, 1964. 31 p.

1. Predsedatel' Vsesoiuznogo tsentral'nogo soveta profsoiuzov.

GRISHIN, V.V.

Soviet trade unions are an active force in the building of communism. Vsem. prof. dvizh. no.12:3-11 D '63. (MIRA 17:3)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov.

GRISHIN, Viktor Vasil'yevich; SEMENOV, S.M., otv. za vyp.

[Report on the activities of the All-Union Central Council of Trade Unions and the tasks of the U.S.S.R. trade unions during the large-scale building of a communist society; report of Comrade V.V.Grishin, President of the All-Union Central Council of Trade Unions at the 13th Congress of the Trade Unions of the U.S.S.R., October 28, 1963] Otchet o rabote VTsSPS i zadachi profsoiuzov SSSR v period razvernutogo stroitel'stva kommunisticheskogo obshchestva; doklad predsedatelia VTsSPS tovarishcha V.V.Grishina na XIII s"ezde profsoiuzov SSSE, 28 dekabria 1963 goda. Moskva, Profizdat, 1963. 77 p. (MIRA 16:12)

(Trade unions)

GRISHIN, V. V.

Soviet workers welcome the workers of the entire world. Vsem prof. dvizh. no.1:4-6 Ja '62. (MIRA 15:2)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov.

(Trade unions--Congresses)

GRISHIN, Viktor

We shall strengthen unity and international labor solidarity.
Vsem. prof. dvizh. no.3:10-21 Mr '61. (MIRA 14:4)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(World federation of trade unions) (World politics)
(Italy--Economic conditions)

GRISHIN, Viktor Vasil'yevich; MIKESHIN, N.P., red.

[Soviet trade unions during the large-scale building of communism] Sovetskie profsoiuzy v usloviiakh razvernutogo stroitel'stva kommunizma; lektsiia prochitannaia v Vysshei partiinoi shkole pri TsK KPSS. Moskva, Izd-vo VPSh i AON pri TsK KPSS, 1961. 39 p.
(MIRA 14:8)

(Trade unions)

GRISHIN, Viktor Vasil'yevich

[Speech at the 22d Congress of the CPSU, October 21, 1961] Rech' na XXII s"ezde KPSS 21 oktiabria 1961 goda. Moskva, Gos. izd-vo polit lit-ry, 1961. 15 p. (MIRA 14:11)
(Communist Party of the Soviet Union)
(Trade Unions)

GRISHIN, V.

In the interest of the workers and the development of communism.
Sov.profsoiuzy 7 no.20:3-7 O '59. (MIRA 12:12)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Labor laws and legislation)

GRISHIN, V.V.

Promote technical progress more persistently. Izobr.i rats. no.11:4-8 N '59. (MIRA 13:3)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Efficiency, Industrial)

GRISHIN, V.

Expand the development of the creative and activities of workers.
Vsem.prof.dvizh. no.5:24-32 My '59. (MIRA 12:9)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Trade unions)

GRISHIN, V.V.

Plans for great achievements, and the Soviet trade unions.
Vsem.prof.dvizh. no.1:4-7 Ja '59. (MIRA 12:2)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov.
(Russia--Economic policy)

GRISHIN, V.V.

[Report on the work of the All-Union Central Council of Trade Unions and objectives of the trade unions of the U.S.S.R. in connection with the decisions of the 21st Congress of the CPSU] Otchet o rabote VTsSPS i zadachi professional'nykh soiuzov SSSR v sviazi s resheniiami XXI s"ezda KPSS; doklad i zakliuchitel'noe slovo na XII s"ezde profsoiuzov SSSR 23 i 26 marta 1959 g. Moskva, Izd-vo Profizdat, 1959. 93 p. (MIRA 12:10)
(Trade unions)

GRISHIN, V.V.

[Report on the work of the All-Union Central Council of Trade Unions, and the tasks of Soviet trade unions in connection with the decisions of the 21st Congress of the CPSU] Otchet o rabote VTsSPS i zadachi professional'nykh soiuzov SSSR v sviazi s resheniiami XXI s"ezda KPSS; doklad. Izd-vo VTsSPS Profizdat, 1959. 76 p. (MIRA 12:6)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for Grishin).

(Trade unions)

SOV/84-58-10-13/54

AUTHOR: Grishin, V., Chairman of the All-Union Central Council of Trade Unions (VTsSPS)

TITLE: Decree of the Presidium of the All-Union Central Council of Trade Unions of 6 October 1958 (Iz postanovleniya Prezidiuma vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov 6 oktyabrya 1958)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 10, p 8 (USSR)

ABSTRACT: By a decree of the Presidium of the All-Union Central Council of Trade Unions, the aviation repair plant (Aviaremontnoye predpriyatiye), headed by Kh. Izmiryan, director, received honorable mention for its performance.

ASSOCIATION: Prezidium Vsesoyuznogo Tsentral'nogo Soveta Professional'nykh Soyuzov (Presidium of the All-Union Central Council of Trade Unions)

Card 1/1

GRISHIN, V.

Soviet trade unions reaching new heights. Vsem. prof. dvizh. no.3: 3-6 Mr '58. (MIRA 11:2)

1. Predsedatel' Vsesoyuznogo tsentral'nogo soveta profsoyuzov. (Trade unions)

GRISHIN, Viktor

GRISHIN, Viktor

The unity of workers is growing stronger. Vsem.prof.dvizh. no.11:9-11 N '57. (MIRA 11:1)

1.Predsedatel' Vsesoyuznogo tsentral'nogo soveta professoyuzov SSSR, vitse-predsedatel' Vsemirnoy federatsii profsoyuzov. (Trade unions)

GRISHIN, V.

Half a century of struggle for the interests of the working class. Vsem.prof.dvizh. no.8:34-37 Ag '57. (MLRA 10:8)

1. Predsedatel' Vsesoyuznogo TSentral'nogo Soveta professional'nykh soyuzov.

(Trade unions)

GRISHIN, V.V.

The militant spirit of workers throughout the world is becoming stronger. Vsem.prof. dvizh.no.11:28-29 N '56. (MLRA 10:1)

1. Predsedatel' Vsesoyuznogo TSentral'nogo soveta professional'nykh soyuzov.

(Trade unions)

GRISHIN, V.

Soviet trade unions are the champions and defenders of the workers' interests. Vsem.prof.dvizh. no.10:38-42 O '56.
(MLRA 9:11)

1. Predsedatel' Vsesoyuznogo TSentral'nogo Soveta professional'nykh soyuzov.
(Trade unions)

GRISHIN, V.

To the International Conference on the 40-hour working week.
Vsem.pref.dvizh.no.6:28 Je '56. (MLRA 9:9)

1.Predsedatel' Vsesoyuznogo TSentral'nogo Soyuza professional'-nykh soyuzov.
(Turin--Hours of labor--Congresses)

SVET, D.Ya.; NARYSHKIN, S.P.; GRISHIN, V.V.

Modulation reflectometer for molten metals and other substances.
Trudy inst.Kom.stand., mer i izm. prib. no.42:59-68 '59.
(MIRA 14:1)

(Reflectometer)

NEMCHENOK, R.L.; SHUL'MAN, A.R.; GRISHIN, V.S.

Barium adsorption on a polycrystalline gold base layer. Fiz. tver. tela 5 no.12:3544-3548 D '63. (MIRA 17:2)

1. Politekhnicheskiy institut imeni M.I.Kalinina, Leningrad.

L 39732-66
ACC NR: AP6006849

tion has the lowest temperature gradient and corresponds to the variation in temperature in the melt. The second section has an intermediate temperature gradient and corresponds to the meniscus due to surface tension. The section with the steepest temperature gradient corresponds to the crystal. There is a considerable difference between the temperature gradient of the melt and the meniscus which is in direct contact with the crystallization front. It is found that the temperature gradient in the meniscus is a linear function of the temperature gradient in the crystal. Metallographic analysis showed that the crystallization front in these experiments was close to linear. The thermal conductivities were found to be 0.075 ± ± 0.007 cal/cm/sec/deg for the solid phase and 0.16 ± 0.02 cal/cm/sec/deg for the liquid phase. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 17Jul65/ ORIG REF: 002/ OTH REF: 004

Card 2/2

L 1223-66 EWT(1)/EWP(k)/EWP(t) WW

ACC NR: AP6006849 SOURCE CODE: UR/0181/66/008/002/0567/0569

AUTHOR: Shashkov, Yu. M.; Grishin, V. P.

ORG: State Scientific Research Institute of the Metal and Rare Metal Industry, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy institut redkoy i metallicheskoy promyshlennosti)

TITLE: Thermal conductivity of silicon in the solid and liquid states close to the melting point

SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 567-569

TOPIC TAGS: heat conductivity, silicon, phase transition, heat balance, single crystal, crystal growth, temperature gradient, melting point

ABSTRACT: The authors studied the thermal conductivity of silicon close to the melting point by measuring the thermal balance at the crystallization front during crystal pulling by the Czochralski method. The equipment and procedure used in the experiment are briefly described. The curve for the change in temperature during growth of the crystal shows three sections which are close to linear. The first sec-

Card 1/2

L 24709-65

ACCESSION NR: AP5002582

(V_m) of the needle at a given supercooling. The needles consisted of twins. Calculation of k was carried out, using the formulas derived by D. Ye. Temkin (Dokl. AN SSSR, 132, 1307, 1960) and the experimental V_m values. The curvature radius of the top end of the needle was also calculated from the Temkin formulas. Calculations based on the k value for silicon, which was found to be 0.64 cm/sec·deg, and on the Temkin formula gave the V_m values which were in agreement with the experimental V_m data over the entire range of supercoolings. The sources of error in the determination of k were discussed. The k values obtained were compared with those for germanium. The need was stressed for further study of the growth process of dendrites and for application of the Czochralski method to produce a more accurate k value. Orig. art. has: 2 figures and 4 formulas.

ASSOCIATION: GIREDMET

SUBMITTED: 01Oct63 ENCL: 00 SUB CODE: MM, SS

NO REF SOV: 004 OTHER: 012 ATD PRESS: 3167

Card 2/2

L 24709-65 EWT(m)/I/EWP(t)/EWP(b) AFWL/ASD(a)-5/AS(mp)-2/RAEM(c)/ESD(gs)/ESD(t)
IJP(c) JD

ACCESSION NR: AP5002582 S/0076/64/038/012/2992/2995

AUTHOR: Shashkov, Yu. M.; Grishin, V. P.

22
B

TITLE: Rate of silicon growth from melt

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 12, 1964, 2992-2995

TOPIC TAGS: silicon single crystal, single crystal growth, silicon dendrite, melt grown crystal, maximum growth rate, rate molecular constant

ABSTRACT: The maximum rate of growth of silicon dendrites from a supercooled melt was measured at supercoolings of 4—15K in order to determine the molecular constant (k) of the growth rate of silicon single crystals. The experimental determination of k was desirable because of the wide discrepancy in theoretical values and the importance of k in estimating various factors in the growth of single crystals. Silicon was vacuum melted and, after seeding, the dendrite was pulled out at an increasing pulling rate until it dwindled to the shape of a needle. The pulling rate, corresponding to the moment at which the needle breaks away, was taken as a maximum growth rate

Card 1/2

L 63625-65

ACCESSION NR: AP5017211

showed that in most of the dendrites, twinning planes pass through the entire dendrite, and that there are usually two twinning planes separated by a distance of 7-10μ. The impurity distribution in the cross section has an H-shaped character, as in germanium dendrites. The transition region between the needle and the dendrite, as well as the needle itself are described in terms of thickness, dislocation bands, and twinning planes. The study shows that the structure of silicon dendrites and their segregation characteristics are similar to those of germanium dendrites. From a comparison of the structure of the needles and dendrites and of the transition region, it is concluded that the growth of silicon dendrites, like that of germanium dendrites, occurs in two stages. Orig. art. has: 3 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti (State Scientific Research and Planning Institute of the Rare Metal Industry)

SUBMITTED: 31Dec64 ENCL: 00 SUB CODE: IC, SS

NO REF SOV: 004 OTHER: 002

Card 2/2

L 63625-65 EEC(b)-2/EWA(c)/EWT(l)/EWT(m)/EWP(b)/T/EWP(t) Pl-4 IJP(c) GG/JD

ACCESSION NR: AP5017211 UR/0020/65/162/006/1349/1351

AUTHOR: Shashkov, Yu. M.; Grishin, V. P.

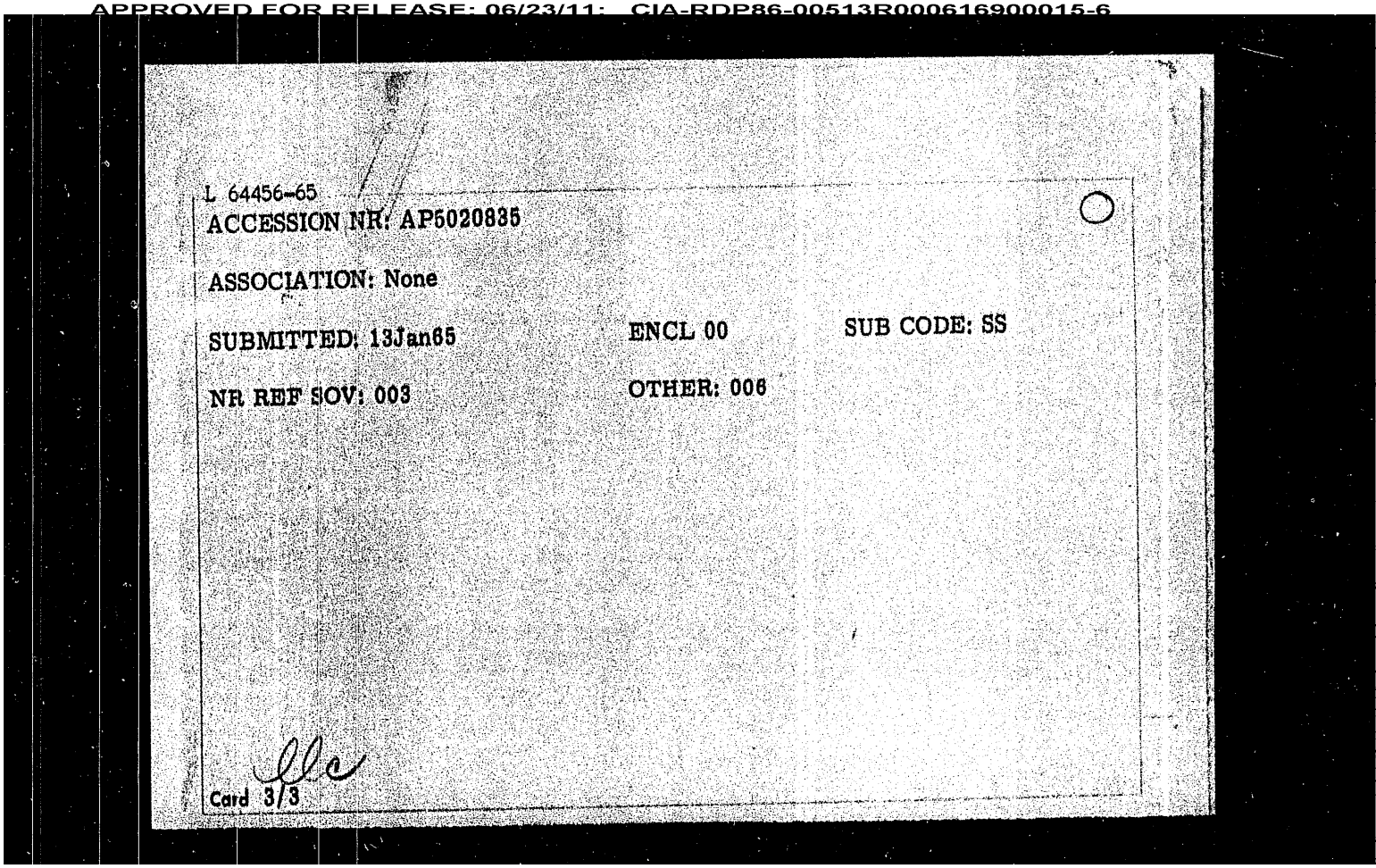
TITLE: Structure of silicon dendrites

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1349-1351, and insert facing p. 1341

TOPIC TAGS: silicon dendrite, crystal growth, dendrite structure, germanium dendrite

ABSTRACT: Dendrites grown from a supercooled silicon melt were studied. Etching was done with H_2CrO_4 + HF (1:1). The cross section was studied by breaking the dendrites and also by etching. After a series of experiments, an etchant of the composition HF + HNO_3 (1:2) was chosen. As in the case of germanium dendrites, the broad planes of silicon dendrites are the (111) planes, and the growth of dendrites proceeds in the (112) direction. The broad planes usually have three bands of dislocations along the dendrite: a central band (dislocation density 10^5-10^6 cm^{-2}) and two more diffuse lateral bands (10^3 cm^{-2}). The distribution of dislocations is described. An examination of the cross section

Card 1/2



L 64456-65
ACCESSION NR: AP5020835

ASSOCIATION: None

SUBMITTED: 13Jan65 ENCL 00 SUB CODE: SS

NR REF SOV: 003 OTHER: 006

Card 3/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R000616900015-6

determined from the equation

$$S\lambda\frac{T_{u_1}-T_0}{h_1}=\lambda S\frac{T_{u_1}-T_0+\Delta T}{h_1}+sLvd,$$

where S is crystal cross section; λ -- heat conductivity of the melt; T_0 --Si crystallization temperature; T_{u_1} and T_{u_2}--temperatures under meniscus during crystal drawing and when drawing was shut down; h_1 and h_2 -- height of interface rise during crystal drawing and during shut-down; Δ T--supercooling at the interface; v--rate of drawing; L--heat of crystallization and d--density of the melt. Supercooling was 2.35 + 0.21C when v = 2mm/min. Supercooling at the crystal-melt interface increased sharply as increased from 1-3 mm/min, and increased much less when $v>$ 4 mm/min, while keeping the crystal diameter constant. There was no noticeable change in the supercooling when the crystal diameter was increased from 10-26 mm while maintaining constant. It was concluded the crystallization mechanisms in Ge and Si are similar in view of the agreement of supercooling values between these crystals. Orig. art. has: 2 figures and 1 equation

L 64456-65 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/GG

ACCESSION NR: AP5020835 UR/0020/65/163/004/0942/0944

AUTHOR: Shashkov, Yu. M.; Grishin, V. P.

TITLE: Supercooling at the crystallization front during the growth of silicon monocrystals by the Czochralski method

SOURCE: AN SSSR. Doklady, v. 163, no. 4, 1965, 942-944

TOPIC TAGS: silicon single crystal, germanium single crystal, single crystal growth, supercooling, crystallization

ABSTRACT: Supercooling at the crystallization front during the growth of Si 111 monocrystals was determined by two methods. Temperature changes during crystal growth were measured in the melt (I) at the meniscus (II) and in the crystal (III). The temperature gradient was least in I and greatest in III, but was constant within each segment of the curve. Supercooling, determined directly at the point of intersection of II and III was 2.4 C for a crystal growth rate of 2 mm/min. Temperatures at the melt-meniscus interface were measured during the crystal drawing and when the drawing was stopped. Supercooling was then

Card 1/3

MOROZOV, V.I.; VORONICHEV, N.M.; NAUMIN, Yu.V.; GARMAZA, V.A.; MEDVEDEV, G.I.; KAMENETSKIY, I.M.; IZOKH, V.V.; BARASHKOV, V.D.; EKPARAPULO, V.K.; RAZEVSKIY, N.P.; PYASHKOV, A.M.; GRISHIN, V.P.; SMOSLOV, I.I.; ROMANENKO, Yu.M.; SAKHAROV, B.B.

Innovations. Avtom. i prib., no.3:61-62 Ap-Je '65. (MIRA 18:7)

ACCESSION NR: AP4041462

where η_κ are the generalized coordinates of deviation of the plant from the programed trajectory, ξ is the coordinate of the control element, $f_\kappa(t)$ are external disturbing forces, $b_{\kappa\kappa}$, m_κ are constant coefficients. A control

$\xi = \xi(\eta_1, \ldots, \eta_n, t)$, which minimizes the functional $I(\xi) = \int_0^t (\Sigma a_k \eta_k^2 + c\xi^2)\,dt$ is found

under a condition that external disturbances $f_k(t)$ $(k = 1, \ldots, n)$ maximize the same functional. The problem is solved for an n-th order plant and for a finite control time. "In conclusion, I wish to sincerely thank A. M. Letov for discussing the results of the study." Orig. art. has: 4 figures and 65 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: DP, IE NO REF SOV: 009 OTHER: 002

Card 2/2

L 18958-65 EWT(d)/EWP(1) Po-4/Pq-4/Pg-4/Pk-4/P1-4 IJP(c)/AEDC(a)/ASD(a)-5/
AFETR/AFMDC/RAEM(d)/ESD(dp) BC
ACCESSION NR: AP4041462 S/0103/64/025/006/0868/0880

AUTHOR: Grishin, V. P.

TITLE: Problem of minimax in the theory of analytical constructing of controllers

SOURCE: Avtomatika i telemekhanika, v. 25, no. 6, 1964, 868-880

TOPIC TAGS: automatic control, automatic controller, minimax problem, controller analytical constructing

ABSTRACT: A further development of B. V. Bulgakov's problem ("Oscillations," Gostekhizdat, 1954) regarding the accumulation of deviations in a system subjected to continuous disturbances is presented. The problem is treated as a variational minimax problem and is solved by a method of dynamic programing developed by R. Bellman. The disturbed motion of the plant is described by this equation:

$$\frac{d\eta_k}{dt} = \sum_{\alpha=1}^{n} b_{k\alpha}\eta_\alpha + m_k\xi + f_k(t) \quad (k = 1, \ldots, n),$$

Card 1/2

shown to be much shorter and simpler. In the problem of optimum aircraft landing a more complex character of the random process should be assumed, by imposing e.g. limitations as to the control and it is most desirable that it should be solved for the condition that the height at the instant of landing be zero. There are 3 figures.

SUBMITTED: February 19, 1962

Card 2/2

S/103/62/023/012/002/013
D201/D308

AUTHOR: Grishin, V.P. (Moscow)

TITLE: A method of calculation related to a process of automatic adaptation

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 12, 1962, 1602 - 1610

TEXT: The author considers the process of aircraft landing. One of the parameters of this process is random, with an unknown distribution function. The problem is first solved, using the Bayes formula for random processes, by Bellman's dynamic programming method, in which case the process of optimal choice makes it possible to obtain a sequence of consecutive control equations resulting in the minimum of the expected values of quality criterion. The same problem is solved next by using the Bellman functional equations in their usual form (without adaptation). The second method, without losing its adaptability, is

GRISHIN,V.N. (Dubovka, Stalingradskaya oblast')

On G.I.Lin'kov's book "Extracurricular work in mathematics in high schools." Reviewed by V.N.Grishin. Mat. v shkole no.5:86 S-O'55. (MLRA 8:11)

(Mathematics--Study and teaching) (Lin'kov,G.I.)

KRUPKO, I.L., prof.; GRISHIN, V.M.

Results of treating closed diaphysial fractures of the bones of the leg. Ortop., travm. i protez. no.12:23-28 '60. (MIRA 14:2)

1. Iz kafedry ortopedii i travmatologii (nach. - prof. I.L. Krupko) Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.

(LEG--FRACTURE)

GRISHIN, V.M.

Comparative evaluation of methods for the treatment of diaphysial fractures of the leg bones. Vest.Khir. 84 no.6:74-81 Je '60.
(MIRA 13:12)

(TIBIA—FRACTURES) (FIBULA—FRACTURES)

[redacted], V.K.

Osteosynthesis of diaphysial fractures of the tibia with Klimov's pin. Ortop.travm. i protez. 18 no.3:9-12 My-Je '57. (MLRA 10:9)

1. Iz kafedry ortopedii i travmatologii (nach. - prof. I.L.Krupko) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova
(TIBIA, fract.
diaphysial osteosynthesis)

GRISHIN, V.M. (Leningrad S-12, Zaporozhnaya ul., d. 1, korpus 18, kv. 39).

Closed intraosseous osteosynthesis in fractures of the metacarpal bones and finger phalanges, under conditions of a first aid station. Ortop., travm. i protez. 27 no. 1:20-24 Ja '66
(MIRA 19:1)

1. Iz kafedry travmatologii i ortopedii (nachal'nik - prof. I.L. Krupko) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova. Submitted October 6, 1964.

SHLYGIN, Ye. D.; MUKANOV, K. M.; GRISHIN, V. M.; MAGOMEDOV, S. G.

Supergene concentrations of gold in the gold ore deposits of northern Kazakhstan. Vest. AN Kazakh. SSR. 19 no.8:43-46 Ag '64. (MIRA 17:7)

LYUBASHENKO, S.Ya., prof.; TYUL'PANOVA, A.F., veterinarnyy vrach; GRISHIN, V.M.; veterinarnyy vrach

Specific prevention, treatment, and some problems in the epizootology of Aujeszky's disease in fur-bearing animals. Veterinariia 37 no.4:46-51 Ap'60. (MIRA 16:6)

1. Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy promyshlennosti (for Lyubashenko). 2. Nauchno-issledovatel'skiy institut pushnogo sverovodstva i krolikovodstva (for Tyul'panova, Grishin).
(PSEUDORABIES) (FUR-BEARING ANIMALS--DISEASES)

RUSAKOV, M.P.; GRISHIN, V.N.

Auriferous secondary quartzites in certain districts of northern Kazakhstan. Vest.AN Kazakh.SSR 16 no.11:39-42 N '60. (MIRA 13:12)
(Kazakhstan--Quartzite)

LYUBASHENKO, S.Ya., prof.; TYUL'PANOVA, A.F., veterinarnyy vrach; GRISHIN, V.M.

Aujesky's disease in mink, arctic fox, and silver fox [with summary in English]. Veterinariia 35 no.8:37-41 Ag '58. (MIRA 11:9)

1. Moskovskaya veterinarnaya akademiya (for Lyubashenko). 2. Vsesoyuznaya nauchno-issledovatel'skaya laboratoriya pushnogo zverovodstva (for Tyul'panova). 3. Starshiy veterinarnyy vrach Roshchinskogo zverosovkhoza (for Grishin).
(Fur-bearing animals--Diseases and pests) (Pseudorabies)

USSR/Diseases of Farm Animals. Diseases Caused by Viruses and Rickettsiae.

Abs Jour: Ref Zhur-Biol., No 9,1958, 40657.

and the skin is severly injured; subcutaneous cells and muscles are torn and there is secretion of bloody exudate. Most of the animals show a weakness of their hindquarters with subsequent paresis. Antibiotics treatment, as recommended by Solomkin, proved to be ineffective. An effective measure, which helps to check the spread of the disease, is elimination of contaminated meat products from the animals' diet.

Card : 3/3

USSR/Diseases of Farm Animals. Diseases Caused by Viruses and Rickettsiae. R

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40657.

onset of the illness. The diseased minks suddenly refuse food; sometimes, the first signs of the disease appear soon after food intake. During the first hour of falling ill, minks go into a depression and their eye slits become narrower; later, depression changes to excitation. Then the animals fall on their backs, and with swift movements of their front paws scratch their cheeks, ears and bellies, without, however, injuring their skins. The onset of the disease is not always accompanied by food refusal in artic and silver foxes. They go into a depression and begin to scratch the skin of their heads with their front and hind paws, first slowly and then more vigorously. In some of the foxes the scratched spots become bald

Card : 2/3

GRISHIN, V M

USSR/Diseases of Farm Animals. Diseases Caused by Viruses and Rickettsiae.

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40657.

Author : Lyubashenko, S. Ya., Tyul'panova, A. F., Grishin, V. M.

Inst :

Title : Aueski Disease Among Mink, Arctic Foxes and Silver Foxes.

Orig Pub: Karakulevodstvo i zverevodstvo, 1957, No 6, 52-54.

Abstract: Animals of all ages are succeptible to the Aueski disease. Basic sources in spreading the disease are subproducts and meat remnants of pigs afflicted with the disease. The disease takes a very acute course, and all diseased minks, as well as arctic and silver foxes die within eight hours after the

Card : 1/3

34

GRISHIN, V.M.

KUDRYAVTSEV, Ivan Vasil'yevich, doktor tekhnicheskikh nauk; BOLTUNOV, Aleksandr Konstantinovich, inzhener; ZAIKIN, Mikhail Pavlovich; UDAL'TSOV, A.N., glavnyy redaktor; MALOV, kandidat tekhnicheskikh nauk, redaktor; KORSHUNOV, B.S., kandidat tekhnicheskikh nauk, redaktor; GRISHIN, V.M., inzhener, redaktor

[Strengthening filets of large shafts by surface peening. New construction of ring electrodes of electromachining tools. Vibration equipment for electric spark machining for hardening and metal coating] Uprochnenie galtelei krupnykh valov poverkhnostnym naklepom. Novaia konstruktsiia kol'tsevogo elektroda elektroerozionnogo stanka. Vibratsionnaia ustanovka dlia elektroerozionnogo uprochneniia i pokrytiia metallov. Moskva, 1956. 11 p. (Peredovoi proizvodstvenno-tekhnicheskii opyt. Ser.8, Mekhanicheskoe uprochnenie detalei i metody elektricheskoi obrabotki metallov. No.T-56-252/6) (MIRA 10:9)

1. Moscow. Institut tekhniko-ekonomicheskoy informatsii
(Metal cutting, Electric)

GRISHIN, Valerian Maksimovich, inzh.; GUTKIN, Ben'yamin Girshevich, kand. tekhn. nauk; LIVSHITS, Abram Lazarevich, kand. tekhn. nauk; YAKHIMOVICH, Dmitriy Fedorovich, inzh.; BRYANTSEVA, V.P., inzh., red.; SOROKINA, T.M., tekhn. red.

[Dimensional electric spark machining of metals]Razmernaia elektroerozionnaia obrabotka metallov. Moskva, Filial Vses. in-ta nauchn. i tekhn.informatsii, 1958. 88 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 8. No.M-58-6/1) (MIRA 16:2)

(Electric metal cutting)

L 35868-66
ACC NR: AP6021004

inserts. In diffusion brazing during holding at brazing temperature, the components of brazing alloy (silver, copper, and nickel) diffuse into the base metal and form titanium-base solid solutions which have a higher hardness than the base alloy. Simultaneously with the diffusion of the filler alloy components into the base metal, titanium diffuses into the brazed joint, the brittle intermetallic compounds decompose, and the content of the filler alloy components in the joint decreases, thereby decreasing the hardness and increasing the strength of the joint. Orig. art. has: 4 figures and 1 table. [MS]

SUB CODE: 11, 13/ SUBM DATE: 19Nov65/ ORIG REF: 002/ OTH REF: 002
ATD PRESS: 5136

Card 3/3

L 35868-66

ACC NR: AP6021004

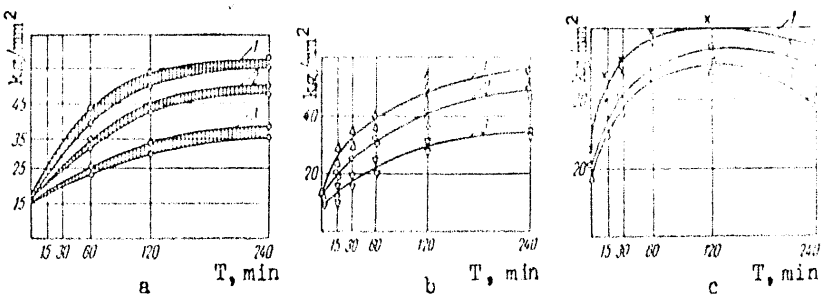


Fig. 1. Holding time dependence of the shear strength of OT4 alloy joints diffusion brazed with silver (a), copper (b) or nickel (c) at 1050C (1), 1000C (2) or 960C (3) in argon

joints, as a rule, failed at the joint or in the diffusion zone. The shear strength of all joints increased with increasing temperature and holding time. Under the same conditions, silver-brazed joints had the highest shear strength: 5—7 kg/mm^2 higher than that of copper brazed alloys and about 12—15 kg/mm^2 higher than that of nickel-brazed joints (see Fig. 1). Diffusion-brazing of titanium and titanium alloys with pre-deposited layers produces a shear strength 3—4 times higher than that achieved in conventional brazing with pre-placed silver-foil

Card 2/3

L 35868-66 EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HM/HW

ACC NR: AP6021004 SOURCE CODE: UR/0125/66/000/006/0041/0044

AUTHOR: Grishin, V. L. (Moscow); Lashko, S. V. (Moscow)

ORG: none

TITLE: The interaction of brazing alloys with titanium in diffusion brazing

SOURCE: Avtomaticheskaya svarka, no. 6, 1966, 41-44

TOPIC TAGS: titanium, titanium alloy, ~~titanium~~ brazing, ~~titanium alloy brazing~~, brazing alloy, silver alloy, copper alloy, nickel alloy, brazed joint structure, ~~brazed joint~~ strength / OT4 alloy, VT1 ~~alloy~~ titanium

ABSTRACT: Experiments have been made to determine the dependence of the chemical and phase composition and strength of silver, copper, or nickel-brazed joints in OT4 titanium alloy and VT1 titanium on the temperature of brazing, holding time, and the thickness of the silver, copper or nickel layers. OT4 and VT1 sheets, 0.4 mm thick, were brazed in an argon atmosphere or in a vacuum of $5 \cdot 10^{-4}$ mm Hg with vacuum-deposited silver, copper, or nickel layers 15 or 30 μm thick or with 50-μ-thick foil inserts. The brazing was done at 960, 1000 or 1100C with a holding time of 1—240 min. In tests, all the brazed

Card 1/3 UDC: 621.791.35 : 669.295

L 35511-65

ACCESSION NR: AP5007787

significantly increased by annealing at 50C for 6—8 hr, or for a shorter time at higher temperatures. For example, a joint annealed at 50C for 6 hr had a shear strength of 0.5 kg/mm^2, which increased to 6 kg/mm^2 with annealing at 650C for 1 hr. The high-temperature heating should be conducted in a vacuum. Orig. art. has: 3 figures. [MS]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 000 OTHER: 001 ATD PRESS: 3217

Card 2/2

L 35511-65 EPA(s)-2/EWP(k)/EWA(c)/EWT(m)/EWP(b)/T/EWP(v)/EWP(t) [illegible]
JD/HM

ACCESSION NR: AP5007787 S/0119/65/000/003/0023/0024

AUTHOR: Grishin, V. L. (Engineer); Lashko, S. V. (Candidate of technical sciences)

TITLE: Specific features in soldering copper with gallium-base solders

SOURCE: Priborostroyeniye, no. 3, 1965, 23-24

TOPIC TAGS: copper, copper soldering, gallium base solder, soldering flux, solder, gallium solder, gallium copper powder solder

ABSTRACT: The effect of various factors in low-temperature soldering of copper parts with pure gallium or gallium-copper powder solder has been investigated. Pickling of the copper parts in a 10% solution of ammonium persulfate was found to be the best method of surface preparation. Of several fluxes tested, a mixture of zinc chloride (2 parts), fuming hydrochloric acid (1 part), and water (7 parts) produced the most satisfactory results. Pure-gallium solder yielded joints with a very low strength at both room and elevated temperatures. The best results were obtained with a solder containing 30 wt% copper powder (35—50 μ particles) kept at 18C for 3—4 days before use. The solder, preheated to 30C, is painted over the surfaces to be joined and held for 6—8 hr at room temperature. This solder produces strong joints even without flux. The strength of soldered joints can be

Card 1/2

GRISHIN, V.L.; GRISHINA, A.D.

Spot welding of niobium. TSvet. met. 37 no.10:67-68 O '64. (MIRA 18:7)

ACCESSION NR: AP4040500

400—500 kg per spot. Heat treatment increased the weld strength by 5—7%. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 06Jul64 ENCL: 00

SUB CODE: MM NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AP4040500 S/0136/64/000/006/0074/0074

AUTHOR: Grishina, A. D.; Grishin, V. L.

TITLE: Spot welding of VAD23 alloy

SOURCE: Tsvetny*ye metally*, no. 6, 1964, 74

TOPIC TAGS: aluminum alloy, wrought aluminum alloy, VAD23 aluminum alloy, alloy weld, alloy weld property, alloy welding, spot welding, alloy weldability

ABSTRACT: VAD23 high-strength wrought aluminum alloy can be successfully spot welded. The weld strength depends primarily upon the current amplitude. The best results in spot welding of sheets 1.5 mm thick were obtained at a current amplitude of 42 kiloamperes, electrode pressure of 700 kg, forging pressure of 1200 kg, and total welding time of 0.12 sec. At 35 kiloamperes, base metal fusion was insufficient, the weld nugget too small, and the single-spot weld failed under a 250 kg shear load. Use of 42 kiloamperes yielded welds with a nugget of 6 mm in diameter. These welds withstood loads up to

Card 1/2

L 15304-65
ACCESSION NR: AP4047427

figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00	ENCL: 00	SUB CODE: MM, IE
NO REF SOV: 001	OTHER: 000	ATD PRESS: 3139

Card 2/2

L 15304-65 EWT(m)/EPF(n)-2/EWP(v)/EWP(t)/EWP(k)/EWP(b) Pf-4/Pu-4
ASD(f)-2/ASD(m)-3/AFTC(p) JD/HM/JG
ACCESSION NR: AP4047427 S/0136/64/000/010/0067/0068

AUTHOR: Grishin, V. L.; Grishina, A. D.

TITLE: Spot welding of niobium

SOURCE: Tsvetny*y metally*, no. 10, 1964, 67-68

TOPIC TAGS: niobium, welding, spot welding, weld, weld property

ABSTRACT: Satisfactory-quality spot welds between niobium sheets 0.1 mm thick and 0.1—0.5 mm thick were produced with the TKM6 stored-energy welder. Sheets 0.5 mm thick were successfully welded with the standard MTP-75 spot welder. In the first case best results were obtained with a capacitance of 250—325 μf and an electrode pressure of 100 kg; in the second case, with a current of 8000 amp and a pressure of 180 kg. To prevent the welding of the electrodes to the sheets, the electrodes of the stored-energy welder were provided with tungsten tips and the electrodes of the standard welder were intensively water cooled. The weld nugget consisted of columnar crystals 0.18—0.25 mm long. The microhardness of the weld was 260—270 kg/mm^2, and that of the base metal was 220—250 kg/mm^2. The higher microhardness of the weld is attributed to the absorption of gases. Orig. art. has: 2

Card 1/2

with Zn, and for abrasive brazing, with alloys of Zn containing 4-7% Al(390C), 4-5%Cu (385C), 5% Al and 5% Sn. The application of a localized heat-up on resistance welding machines produced a joint with a somewhat higher thermostability than in the case of brazing with SAP-1. Very good results were obtained with silumin liquid metals. The most appropriate fluxes were compositions containing large amounts of zinc chloride. Since this salt decomposes upon heating, metallic zinc deposits on the SAP-2 sample contact with the flux. A further dipping of the sample into the liquid metal causes a dissolution of the zinc layer and base material in the solder. The break on testing shows that it depends upon brazing method, geometry, and type of joint. In the case of resistance welding, the samples broke in all cases along the base material at a short distance from the joint. Corrosion testing of SAP-2 brazed joints in an aqueous solution of 3% NaCl + 0.1% H_2O_2 for 30 days showed good qualities in the brazed joints. Orig. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NO REF SOV: 002 OTHER: 000

L 27271-65 EWP(e)/EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 IJP(c)
MJW/JD/HM

ACCESSION NR: AP4011289 S/0136/64/000/001/0058/0062

AUTHOR: Grishin, V. L.

TITLE: Brazing with type SAP-2 baked aluminum powder

SOURCE: Tsvetny*ye metally*, no. 1, 1964, 58-62

TOPIC TAGS: brazing, aluminum powder, baked aluminum powder, aluminum powder brazing, SAP-2 brazing powder

ABSTRACT: Difficulties in brazing with SAP-2 brazing material necessitates development of new methods for joining the material. A new method for using the appropriate fluxes and solders also had to be found. Brazing was performed on SAP-2 samples (plates and rods) contained 14% Al_2O_3, which were subjected to high temperature annealing. Some components (Zn, Sn, Cu) were vacuum deposited to a thickness of 0.1 to 0.4 mm surface of the starting material to observe the interaction of the solders and the SAP-2. Subsequent heating was conducted on atmospheres of air and argon. Best results were observed

Card 1/2

L 3367-66

ACCESSION NR: AT5020491

ENCLOSURE: 02

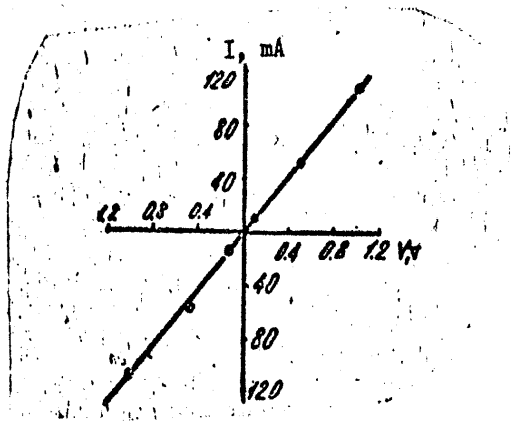


Fig. 2.
Volt-ampere characteristic of contacts in GaAs-Ga_2Se_3 film

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L 3367-66

ACCESSION NR: AT5020491

ENCLOSURE: 01

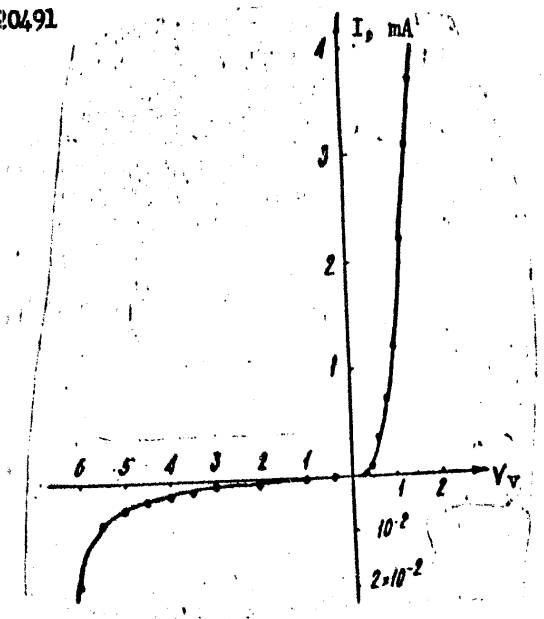

Fig. 1. Static volt-ampere characteristic of junction produced by diffusion of sulfur into p-type GaAs

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L 3367-66

ACCESSION NR: AT5020491

$5 \cdot 10^{17}$-$9 \cdot 10^{19}$ cm $^{-3}$. The static volt-ampere characteristic of a junction produced by diffusion of sulfur into p-type GaAs is shown in Fig. 1 on the Enclosure. The germanium-diffusion junctions in the p-type GaAs had rectification factors of up to $4 \cdot 10^{5}$, while those produced by sulfur diffusion had a factor of $6 \cdot 10^{3}$. In the case of n-type GaAs, the germanium-diffusion junctions had a rectification factor of about $7 \cdot 10^{4}$. The volt-ampere characteristic of contacts in GaAs-Ga_2Se_3 film is shown in Fig. 2 on the Enclosure. Orig. art. has: 7 graphs, 2 diagrams, and 2 formulas.

ASSOCIATION: none

SUBMITTED: 060ct64 ENCL: 02 SUB CODE: SS

NO REF SOV: 005 OTHER: 007

Card 2/4

L 3367-66 EWT(l)/EWT(m)/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/GS

ACCESSION NR: AT5020491 UR/0000/64/000/000/0446/0456

AUTHORS: Khludkov, S. S.; Vyatkin, A. P.; Grishin, V. I.; Presnov, V. A. (Professor)

TITLE: Diffused p-n junctions in gallium arsenide

SOURCE: Mezhvuzovskaya nauchno-tekhnicheskaya konferentsiya po fizike poluprovodnikov (poverkhnostnyye i kontaktnyye yavleniya). Tomsk, 1962. Poverkhnostnyye i kontaktnyye yavleniya v poluprovodnikakh (Surface and contact phenomena in semiconductors). Tomsk, Izd-vo Tomskogo univ., 1964, 446-456

TOPIC TAGS: gallium arsenide, pn junction, sulfur, germanium, selenium

ABSTRACT: Diffused p-n junctions in p-type gallium arsenide, p-n junctions in n-type GaAs, and also p-n-p structures in p-type GaAs were studied, and the methods of producing these junctions are discussed. The p-n junctions were produced by diffusion of sulfur and germanium in evacuated quartz ampules (10^{-4}-10^{-5} mm Hg) with subsequent annealing, grinding, and etching (5% NaOH + 30% H_2O_2 in 5:1 ratio).

The p-n-p structures were prepared by diffusion annealing of GaAs in selenium vapors at 750-1100C for 0.5-22 hrs with a selenium concentration in the vapor of

Card 1/4

ACCESSION NR: AP4006248

The alloy was prepared by vacuum melting in the MPV-3M induction oven at $5 \cdot 10^{-4}$ mm merc. col. and also by open melting under 34A flux (for protecting the metal against oxidation). Mobility and wettability of this alloy at 380-450C were satisfactory. The contact angles of wetting were within the limits of 20-30 degrees. High quality welded connections were obtained with the use of different heat sources (gas burner, ovens, induction ovens) and with flux materials: F380, 34A, FV-3, and F124. Experiments were performed on aluminum AD1, on duralumin D20AT, and on the high strength Al alloys V92 and ATsM. The authors conclude that the joints are of high quality and that the use of MATI-2P makes it possible to do the work at 480-500C. The joints had a high tensile strength and good corrosion stability in 3% NaCl solution. Orig. art. has: 1 table and 3 figures.

ASSOCIATION: MATI

SUBMITTED: 00 DATE ACQ: 31Dec63 ENCL: 01

SUB CODE: ML NO REF SOV: 003 OTHER: 000

Card 2/3

S/0135/63/000/012/0030/0031

ACCESSION NR: AP4006248

AUTHORS: Grishin, V. L. (Engineer); Khadzhi, D. L. (Engineer)

TITLE: Brazing alloy for aluminum alloys

SOURCE: Svarochnoye proizvodstvo , no. 12, 1963, 30-31

TOPIC TAGS: aluminum alloy, high strength aluminum alloy, AD1 aluminum alloy, ATsM aluminum alloy, D20AT aluminum alloy, V 92 aluminum alloy, sheet brazing, brazing alloy, MATI 2P brazing alloy, joint strength, joint corrosion, aluminum alloy brazing, brazing temperature, brazing, D20 aluminum alloy

ABSTRACT: The authors describe a new type of brazing alloy MATI-2P (Al-Ge-Si) for welding high-strength aluminum alloy sheets. This particular alloy was investigated because its melting temperature was below 550C, and because Ge being similar in nature to Si, did not affect the corrosion resistance of the welded connections. The possible compositions of the ternary alloy are seen on the phase diagram on Fig. 1 of the Enclosure. The composition of the alloy used is shown on the diagram by the crosshatched triangle near the sutectic line; the compositions of the experimental alloys were: Si--3 to 4%, Ge--34 to 36%, the rest--Al.

Card 1/2

On the interaction of some...

exceed 20 - 30°, and the magnitude of the fluidity area approaches values obtained for AD1. There are 7 figures.

ASSOCIATION: MATI

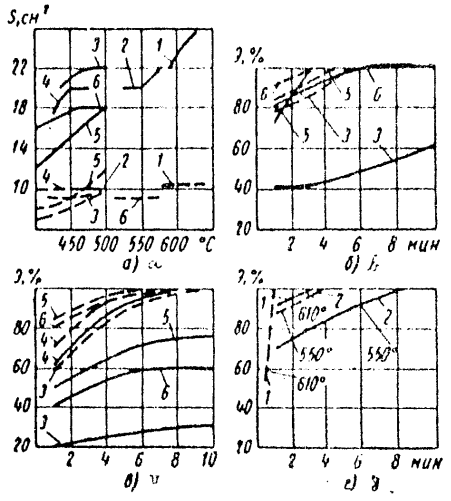

Figure 3.
Legend: 1 - AL2; 2 - 34A; 3 - P425A; 4 - zinc; 5 - binary eutectics (95% Zn and 5% Al); 6 - ternary eutectics (4% Cu, 7% Al, 89% Zn); Dotted line - SAP-1; continuous line - AD1.

On the interaction of some...

evaluate the magnitude of the physico-chemical erosion of the solders in the base materials. The degree of dissolving of the solders was evaluated from the relation $E = \frac{P}{\delta} 100\%$ where E is the index of physico-chemical erosion, P the penetration depth into the base material in mm, and δ the thickness of the base material in mm. Figure 3 shows the fluidity areas of various solders on AD1 and SAP-1, as functions of heating temperature (a), the magnitude of erosion of the solders as a function of the holding time at 500°C (b); 450°C (v); and 550 and 600°C (g). Illustration 4 represents the wetting angles after the spreading of various solders on the surface of AD1. The erosion of the solders in SAP-1 was stronger and their fluidity on the base material was weaker as compared with AD1. This can be explained by the presence of aluminum oxide in SAP-1 which is practically insoluble in pure aluminum. This behavior of the solders is explained by the particular structure of SAP-1 which is strongly different from that of aluminum. The wettability with solders can be improved and SAP-1 erosion can be reduced by cladding same with different aluminum alloys. Best results were obtained with the use of one- and two-sided claddings with AMTs, AL2 and AMg6 alloys, in a thickness equal to 15 - 20% of the SAP-1 thickness. The wetting angles do not

43297

S/135/62/000/012/013/015
A006/A101

AUTHOR: Grishin, V. L., Engineer

TITLE: On the interaction of some solders with AL 1 (AD1) aluminum and CAL-1 (SAP-1) (sintered aluminum powder)

PERIODICAL: Svarochnoye proizvodstvo, no. 12, 1962, 30 - 34

TEXT: The author investigated the interaction of zinc- and aluminum-base solders with AD1 and SAP-1 at soldering temperatures, ranging from 450 to 610°C. The SAP-1 material contained 10.5% aluminum oxide. The following solders were used: pure zinc TsO (TsO); eutectic zinc alloy with aluminum (5% Al; the rest Zn); eutectics with 4% Cu, 7% Al, the rest Zn; solder P 40-5A (P40-5A) (5% Al, 15% Cu, the rest Zn), solder 34A, and eutectic silumin AL2 (AL2) with 12% silicon. The AD1 and SAP-1 specimens were placed on a steel plate up on a ceramic backing and put into a hf-inductor. The solder and flux were placed onto the center of the specimen. The specimens were heated to soldering temperatures, cooled and cleaned. The fluidity of the solders on the base materials and the magnitude of the wetting angles were determined. Sections were prepared to

Card 1/4

(PMOA). The soldered joints showed satisfactory shearing strength at 20 and 300°C (from 62 - 96 to 60 - 84 and from 22 - 38 to 18 - 24 kg/mm², respectively). 15-day-tests in sea water and in a moisture chamber showed satisfactory corrosion resistance of the soldered joints. There are 2 tables and 7 figures.

ASSOCIATION: MATI

AUTHORS: Volgov, Yu. S., Kravdzni, D. L., Grigain, V. [illegible], Engineers

TITLE: Brazing of foam-type aluminum with CAP-1 (SAP-1) sintered aluminum powder and OT4 titanium alloy

PERIODICAL: Svarochnoye proizvodstvo, no. 6, [illegible], [illegible]

TEXT: Brazing of foam-aluminum with SAP-1 and OT4 is difficult due to the oxide layer on the foam-aluminum surface and internal oxides. Moreover, the interaction of titanium-base alloys with oxygen and hydrogen entails oxidation and embrittlement of surface layers. It was found that good joints can be obtained by brazing with pretinning. The OT4 alloy should prior to brazing be coated with an aluminum layer. Brazing with active fluxes proved inexpedient, therefore the authors recommend abrasive brazing with the use of zinc-base solders. The brazing temperature should not exceed [illegible] - 510°C to prevent bulging of SAP-1 and deformation of the foam-aluminum cells. Mechanical tests were made with specimens brazed by the described technique with the following solders: 90% Zn - 5% [illegible] - 5% Al; [illegible]% Zn - 5% Al; PSr-A (PSrA) and PSr-A

Card 1/2

Deposition of ...

on the coating after bending the test piece through an angle of 10 - 20°. This maximum permissible angle of deflection increased to 30 - 35° for test pieces immersed for 1 min and reached 60 - 70° for specimens tinned by short (30 - 40 sec) immersion. In no case did the aluminium coating flake-off from the titanium alloy core. It was concluded that to obtain the best results tinning of the alloy studied with aluminium should be carried out at a temperature of about 800 °C and the immersion time should be kept to a minimum. OT-4 alloy parts, pre-tinned with aluminium by this method and brazed to various aluminium alloys, produced very strong joins.
There are 2 figures.

to ensure complete wetting of the immersed part of the test piece. A bright coat of uniform thickness (about 0.02 mm) was formed under these conditions and the degree of oxidation of the part above the bath was negligible.

b) The thickness of the aluminium coating increased with increasing holding time. The increase was not uniform, being greatest at the lower end of the immersed part of the test piece, whose part above the surface of the bath became heavily oxidized and, at longer holding times, covered with isolated aluminium particles.

c) Metallographic examination and micro-hardness measurement of the region at the Ti-Al interphase showed that, irrespective of the immersion time, an alloy layer was formed in this region. The thickness of the alloy layer increased with increasing holding time and so did the proportion of a hard phase, whose hardness was similar to that of the $TiAl_3$ phase.

d) Bending tests were conducted on specimens measuring (before tinning) 10 x 30 x 1.5 mm. In the case of test pieces immersed in the bath for 5 - 10 min, cracks appeared

Deposition of ....

pre-tinning the latter metal with aluminium. The experimental work was carried out on OT-4 alloy specimens which, after degreasing, cleaning with a revolving steel brush and pickling in a 20-ml. HF, 15 ml. HNO_3, 65 ml. H_2O solution, rinsing and drying, were dipped in a molten aluminium bath covered with a layer of the 5380 (F380) flux. Preliminary tests showed that no wetting occurred at temperatures lower than 800 °C; at the same time, the treatment had to be carried out at a temperature below the temperature of the $\alpha \rightarrow \beta$ transformation. In subsequent experiments, therefore, the tinning bath was maintained at 800 - 860 °C, the time of immersion varying between 10 sec and 10 min. Each test piece was cooled in air after having been withdrawn from the bath, the flux residues were washed off, the test piece was rinsed and dried, after which the quality of the coat and the microstructure at the Ti-Al interface were examined and the ductility of the bond formed under various conditions was determined by bending tests. The results can be summarized as follows. a) A minimum holding time of 30 sec was necessary

Card 2/4

37937

S/136/62/000/005/002/002
E193/E383

AUTHORS: Dolgov, Yu.S., Khadzhi, D.L. and Grishin, V.L.

TITLE: Deposition of an aluminium film on the alloy OT-4 as a means of facilitating brazing titanium alloys to aluminium alloys

PERIODICAL: Tsvetnyye metally, no. 5, 1962, 66 - 70

TEXT: Titanium and its alloys are difficult to braze because: 1) titanium forms brittle intermetallic compounds with practically all other metals; 2) even at relatively low temperatures (500 - 900 °) it absorbs oxygen and hydrogen which cause embrittlement of the metal; 3) it forms readily tenacious surface oxide films, which are difficult to reduce or remove by flux; 4) it alloys readily with other metals, so that there is a risk of undercutting when thin sections are joined by brazing.. The object of the present investigation was to explore the possibilities of overcoming difficulties encountered in joining thin (1 - 1.5 mm) aluminium-alloy components to similar titanium or titanium-alloy parts by

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On brazing SAP (Sintered aluminum powders)

Table continued:

Brazing method	Grade of composition of solder alloy	Length of overlap	Test temperature	Shearing in kg/mm^2	Nature of break of the specimens
Resistance brazing	AL2	5	500	2.5 - 3	In the weld adjacent zone
	34 A with 0.4%Ti	5	20	18 - 20	"
	-	5	300	11 - 12	"
	-	5	500	2.5 - 3.5	"
	AL2 (= 0.8 - 1.0 mm)	-	20	24 - 30	"
	-	-	300	14 - 16	"
	-	-	500	3.6 - 4.2	"
	AMg6	-	20	26 - 28	"
	-	-	300	14 - 18	"
	-	-	500	3.7 - 4.8	"

ASSOCIATION: MATI (Moscow Aviation Technological Institute)

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On brazing SAP (Sintered aluminum powders)

thick brazing alloy strips inserted between the brazed sheets. Brazing conditions for 1 mm thick SAP-1 sheets are: 42 - 48 kamp soldering current; 0.4 - 0.8 sec pulse and 750 - 1,000 kg compressing force. Results of static shearing tests made with specimens that were brazed by the aforementioned methods are given in the table below: There are 3 tables, 7 figures and 2 Soviet-bloc references.

Brazing method	Grade of composition of solder alloy	Length of overlap	Test temperature	Shearing in kg/mm^2	Nature of break of the specimens
Pretinning	P300A	4 - 10	20	3 - 5	In the weld
	5% Cu	4 - 10	20		
	5% Al				
	the rest Zn			8 - 13	"
	5% Al	4 - 10	20	6 - 10	"
	the rest Zn	4 - 10	20	3 - 6	"
	P425A				
	P480A	4 - 10	20	4 - 7	"
Dipping into the solder alloy	AL2	5	20	16 - 18	In the weld adjacent zone
through a flux layer	"	5	300	10 - 12	"

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2898 3 S/135/61/000/011/003/007
A006/A101

On brazing SAP (Sintered aluminum powders)

alloys reacted strongly with the base metal causing its extensive erosion. Torch brazing with an air-propane flame yielded also unsatisfactory results. Better results were obtained with fluxless brazing in which faying surfaces of the parts to be brazed are first "pretinned" by rubbing the brazing alloy rod against the heated SAP-1 surface. Pretinned parts are then clamped into a fixture and heated until drops of the alloy appear in the joint. Lap joints made by this method with an overlap ten times the sheet thickness have a strength, equal to that of the base metal. Another method that was developed is brazing by dipping. The parts to be brazed are dipped into a bath of molten alloys, such as Al-Cu-Si, Al-Cu-Si-Zn, Al-Cu-Zn and others. On the top of the molten bath there is a layer of flux (34 A, Ф124 (F124), 56% $BaCl_2$ - 36% $ZnCl_2$ - 8% Na_3AlF_6). The base material interacts with the alloy and a "buildup" is formed on the submerged end of the part, which is machined and filed. The parts are then assembled in a fixture and heated (preferably with an indirect argon-shielded arc) until the joint is formed by melting of the alloy. A great advantage of this method combining welding and brazing is the possibility of using high-melting aluminum base alloys such as eutectic Silumin and 3A4 type alloy with 0.3 - 0.4% titanium. Satisfactory results were also obtained by resistance brazing on a conventional spot welding machine using 0.8 - 1.0 mm

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28983 S/135/61/000/011/003/007
A006/A101

AUTHORS: Dolgov, Yu. S., Grishin, V. L., Khadzhi, D. L., Engineers

TITLE: On brazing SAP (Sintered aluminum powders)

PERIODICAL: Svarochnoye proizvodstvo, no. 11, 1961, 10-13

TEXT: There are no precise data available on the strengthening of SAP type materials and their peculiarities predetermined by the production technology and composition. This makes particularly difficult the problems of welding and brazing. Preliminary experiments revealed that exposure to temperatures as high as 500°C for 10 minutes does not affect SAP-1. With prolonged exposure and increased temperature, blisters develop on the surface. The temperature of the base material in furnace brazing is consequently limited to 500°C max, the melting temperature of the brazing alloys to 480°C max, and the service temperature of the brazed parts to below 300°C. The interaction of solders with SAP-1 is very different from that with aluminum or its usual alloys. Information is given on investigations made with SAP-1 brazed with zinc and aluminum solders by various methods. Furnace brazing was unsuccessful due to the poor wettability of SAP-1 and poor fluidity of the brazing alloys. Moreover, zinc-base brazing

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ACC NR: AP6011520 SOURCE CODE: UR/0382/66/000/001/0127/0131

AUTHOR: Grishin, V. K.; Kuznetsov, A. G.

ORG: none

TITLE: Characteristics of an electromagnetic conductive pump on liquid sodium at temperatures up to 500C

SOURCE: Magnitnaya gidrodinamika, no. 1, 1966, 127-131

TOPIC TAGS: electromagnetic pump, electromagnetic property, electric transformer, sodium

ABSTRACT: The design, assembly diagram, and method of experimental characteristic determination are presented for an electromagnetic conductive pump of the transformer type running on liquid sodium at temperatures from 300 to 500C. Curves for the external characteristics of the pump are given. The authors point out that B. I. Bubchenkov took part in this work. Orig. art. has: 4 figures and 1 table. [NT]
[Based on authors' abstract]

SUB CODE: 20/ SUBM DATE: 14May65/ ORIG REF: 001

Card 1/1 UDC: 621.689.538.4

the technology of lithium—problems of its purification, preparation, melting, storage, and transportation—are discussed along with the preparation of operational units. . Basic information on safety precautions is given. The authors thank Doctor of Technical Sciences Professor A. V. Ryabchenkov, Candidate of Technical Sciences G. G. Konradi, V. A. Ulanov, Ye. V. Balashov, and K. N. Klyagin for their assistance. Most of the 157 references are Soviet.

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Grishin, Vasiliy Koz'mich, Mikhail Grigor'yevich Glazunov, Artur Geregirovich Arakelov, Aleksandr Vladimirovich Vol'deyt, and Gertruda Semenovna Makedonskaya

Svoystva litiya (Properties of Lithium) Moscow, Metallurgizdat, 1963. 115 p. Errata slip inserted. 2700 copies printed.

Ed. of Publishing House: O. M. Kamayeva; Tech. Ed.: A. I. Karasev.

PURPOSE: This book is intended for engineers, scientific research workers, and advanced students.

COVERAGE: The book describes the physical, thermodynamic, and basic chemical properties of lithium which are of great importance in the design and operation of various units employing liquid-metal heat carriers. Problems of the corrosive activity of lithium in its interaction with the most important structural materials used in building such units are reviewed. Special features of

Card 1/6

Space charge interaction with the ...

$$\frac{d}{d\tau}\left(\frac{1}{\tau}\frac{d\eta}{d\tau}\right)+\nu_0^2\tau\eta=\frac{d}{d\tau}\left(\frac{\Delta\omega-q\alpha\omega\frac{\Delta H}{H}}{\tau}\right)+\frac{\mu\Delta\delta_0}{\delta_0}, \qquad (3.11)$$

$$\nu_0^2=\nu^2\frac{\xi_0}{\tau_0};\quad \mu=q\frac{2e^2\delta_0^2\omega\cos^2\varphi_s}{mE_0\gamma_{sp.}^4},$$

The forced oscillations produced by the righthand sides of (3.11) are found as

$$\eta_{вын.}(t_{sp.})=\sqrt{\frac{\pi}{8\nu_0}}\left(\Delta\omega-q\alpha\omega\frac{\Delta H}{H}\right)+\frac{\sqrt{\pi}}{2}\frac{\mu}{\nu_0^{3/2}}\frac{\Delta\delta_0}{\delta_0}. \qquad (3.12)$$

These equations show it is found that the importance of ΔE_0 increases with the number of accelerated particles. There is 1 figure.

SUBMITTED: March 9, 1962

Card 3/3

Space charge interaction with the ...

of the phasing field is obtained. Here, $\eta = \varphi - \varphi_s$, $E_s = E_0 \cos\varphi_s$ is the accelerating field, α is the instantaneous orbit factor, $\nu = E_s/E_0$, R is the mean radius of the particle orbit. In the absence of disturbances the phase is described by

$$\eta = A_1 \cos\nu \sqrt{\frac{\hat{\xi}_0}{\tau_0}}\frac{\tau^2}{2} + A_2 \sin\frac{\nu}{2}\sqrt{\frac{\hat{\xi}_0}{\tau_0}}\tau^2, \qquad (3.9)$$

and the canonical momentum varies as

$$P = L\left(A_1 \sin\frac{\nu}{2}\sqrt{\frac{\hat{\xi}_0}{\tau_0}}\tau^2 - A_2\cos\frac{\nu}{2}\sqrt{\frac{\hat{\xi}_0}{\tau_0}}\right), \qquad (3.10).$$

$$L^2 = \frac{m\hat{\xi}_0\tau_{sp}^4 E_0 |\operatorname{tg}\varphi_s|}{2q\omega\tau_0}.$$

The influence of disturbances on the phase is estimated from equations

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S/057/63/033/003/008/021
B104/B180

AUTHOR: Grishin, V. K.

TITLE: Space charge interaction with the high-frequency field in cyclotrons

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 3, 1963, 307-316

TEXT: In the first and second section of this paper optimum acceleration conditions and the variation of the beam parameters during acceleration are discussed on the basis of papers published between 1935 and 1961. The third section deals with the motion of particles in the critical energy range in strong-focusing accelerators. Proceeding from the linearized equation of motion

$$\dot{\eta}=q\frac{1-\alpha\gamma^2}{mR\gamma^3}P;\quad \dot{P}=-e\mathcal{E}_0(t)\eta\sin\varphi_s, \tag{3.1}$$

the amplitude

$$\mathcal{E}(\tau)\simeq\frac{\tau}{\tau_0}\mathcal{E}_0\left(1-\frac{\tau}{\tau_0}\mathcal{E}_0\right)^{1/3}\simeq\frac{\tau}{\tau_0}\mathcal{E}_0, \tag{3.7a}$$

Card 1/3

GRISHIN, Vasiliy Koz'mich; GLAZUNOV, Mikhail Grigor'yevich; ARAKELOV, Artur Gereginovich; VOL'DEYT, Aleksandr Vladimirovich; MAKEDONSKAYA, Gertruda Semenovna; KAMAYEVA, O.M., red.izd-va; KARASEV, A.I., tekhn. red.

[Properties of lithium]Svoistva litiia. Moskva, Metallurgizdat, 1963. 115 p. (MIRA 16:3)

(Lithium)

Theory of nonlinear betatron...

describes the betatron oscillations of particles moving near the equilibrium orbit of an accelerator. x and z are the natural particle coordinates calculated from the orbit, $\vartheta = K_0 s$ is the azimuth, $K_0 = 2\pi/\Pi$, where Π is the perimeter of the orbit, $K(\vartheta)$ is the curvature of the orbit, H is the field, s is the trajectory arc as an independent variable. In successive approximation with respect to the small parameter ε the solutions of the homogeneous solutions ($\varepsilon = 0$)

$$\left.\begin{aligned} x &= x_0 f_1(\vartheta)\cos(\nu_1\varphi_1(\vartheta) + \alpha_1), \\ z &= z_0 f_2(\vartheta)\cos(\nu_2\varphi_2(\vartheta) + \alpha_2), \end{aligned}\right\} \qquad (3)$$

are represented as series. Nonlinear betatron oscillations, nonlinear friction and the possibility of a nonlinear limitation of the oscillation amplitudes are studied. An amplitude limit is obtained at which the particles will invariably resonate.

SUBMITTED: April 25, 1962 (initially)
February 6, 1962 (after revision)

Card 2/2

S/057/62/032/008/004/015
B104/B102

AUTHOR: Grishin, V. K.

TITLE: Theory of nonlinear betatron oscillations in strongly focusing accelerators

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 8, 1962, 924 - 930.

TEXT: System

$$\left.\begin{aligned}
&\frac{d^2x}{d\theta^2}+h^2(1-n)x=K_0\left(2n-1-\frac{n_1}{2}\right)h^3x^2+\frac{1}{2}K_0(n_1-n)h^3z^2+\\
&+K_0^2\left(n-n_1+\frac{n_2}{6}\right)h^4x^3+\frac{1}{2}K_0^2(3n_1-n_2-n)h^4xz^2+\\
&+K_0^2\left(\frac{3}{2}n-2\right)h^2xx'^2+\frac{1}{2}K_0^2nh^3xz'^2+\ldots=\varepsilon F,\\
&\frac{d^2z}{d\theta^2}+h^2nz=K_0(n_1-n)h^3xz+K_0^2\left(2n_1-n-\frac{1}{2}n_2\right)h^4x^2z-\\
&-\frac{1}{6}K_0^2(n+n_1-n_2)h^4z^3-\frac{1}{2}K_0^2h^2nzx'^2+\ldots=\varepsilon G,
\end{aligned}\right\}\quad(1),(2)$$

$$n_{m-1}=\frac{(-1)^m}{K^mH}\frac{\partial^mH}{\partial x^m}\Big|_{x=x_0};\quad h=\frac{K}{K_0}$$

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S/188/62/000/004/003/010
B108/B102

AUTHOR: Grishin, V. K.

TITLE: Interaction of space charge with the h.f. field in cyclic accelerators

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 4, 1962, 40 - 44

TEXT: The interaction between the longitudinal field of a charged particle beam and the h.f. field in a cyclic accelerator is studied for subcritical energies. In this case, $d\omega/dE \lesssim 0$ (ω - frequency, E - particle energy). The factors causing azimuthal and radial limitation of a particle bunch (size of chamber, frequency, energy dissipation) are pointed out. It is shown from the equation of motion that interaction between beam and h.f. field changes the conditions of in-phase acceleration. Some possibilities of increasing the pinch current are discussed.

ASSOCIATION: NIIYaF

SUBMITTED: November 15, 1961
Card 1/1

Charged beam stability in ...

$$\frac{\partial F}{\partial z}\frac{d}{d\varphi}\int_{-\infty}^{\infty} F dz + \alpha z \frac{\partial F}{\partial \varphi} = 0, \qquad (6)$$

$$\alpha = -\frac{(R^2\gamma^2 v\omega')_c}{e^2\delta}.$$

For $\alpha > 0$,

$$F = \begin{cases} \left(\psi^2 - \frac{\alpha^2}{\pi^2} z^2\right)^{1/2} \\ 0 \end{cases}, \quad |z| \leq \frac{\pi}{\alpha}\psi,$$

is a solution of (6). It is shown that a particle cluster which is phased by the proper field and bounded as to azimuth may be consistent. A study of how the original shape of the cluster affects its stability has shown that a cluster will be most stable at values of $\psi(\varphi)$ for which λ_{min} of plasma vibrations is maximum.

ASSOCIATION: NIIYaF
SUBMITTED: August 14, 1961
Card 2/2

S/188/62/000/003/009/012
B104/B112

AUTHOR: Grishin, V. K.

TITLE: Charged beam stability in storage systems

PERIODICAL: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 3, 1962, 75-81

TEXT: If the charged particles in a beam interact electromagnetically only, the kinetic equation reads

$$\frac{\partial F}{\partial t} + eE\frac{\partial F}{\partial z} + \omega(z)\frac{\partial F}{\partial \theta} = 0,$$

where θ and $z = \int_{E_c}^{E} dE/v$ are canonical variables, $\vec{E}$ is the longitudinal electric field strength of the particles, e is their charge, $F = F(z,\theta,t)$ is the particle distribution density. When the particles in the beam are acted on by their longitudinal field, their equilibrium distribution is described by the integral differential equation

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